

HOMEWORK

p. 377 # C1, C2, 1-4, 8-12, 17

2. In the arrangement of the letters given, how many different paths will spell each of the following names?

<p>a) PASCAL</p> <pre> P A A S S S C C C C A A A A A L L L L L L </pre>	<p>b) BLAISE</p> <pre> B L L A A A I I I I S S S S E E </pre>	<p>c) EULER</p> <pre> E U U L L E E </pre>
---	---	--

10. Evaluate the following:

a) $\binom{8}{6}$ b) $\binom{5}{5}$ c) $\binom{4}{0}$

11. Find the number in Pascal's Triangle given the following information about the row and position:

- a) Row 12, Position 9
- b) Row 1, Position 0
- c) 3rd Row, 2nd Position
- d) Ninth Row, Ninth Position

Answers

2. a) 32 b) 20 c) 4
 10. a) 28 b) 1 c) 1
 11. a) 220 b) 1 c) 2 d) 1

377 HOMEWORK p. ~~377~~ #C4, 5acef, 6, 7, 19

**** Use ${}_n C_r$ rather than Pascal's triangle when finding coefficients.**

Pick and Choose from these Extra Questions

ANSWERS

6. Expand and simplify each of the following.

(a) $\left(x - \frac{2}{x^2}\right)^5$ (b) $(2x^3 + \sqrt{y})^4$
 (c) $\left(a^2 + \frac{3b}{a}\right)^4$ (d) $\left(\sqrt{x} - \frac{2}{\sqrt{x}}\right)^6$

7. Find the first four terms in the expansion of each of the following.

(a) $(a+b)^{10}$ (b) $(1-x^2)^{12}$
 (c) $\left(x^2 + \frac{2}{x^2}\right)^9$ (d) $\left(2x - \frac{3}{x^2}\right)^8$
 (e) $\left(x^3 - \frac{2}{x^2}\right)^6$ (f) $(x + \sqrt{x^3})^{11}$

6. (a) $x^5 - 10x^2 + \frac{40}{x} - \frac{80}{x^4} + \frac{80}{x^7} - \frac{32}{x^{10}}$
 (b) $16x^{12} + 32x^9\sqrt{y} + 24x^6y + 8x^3\sqrt{y^3} + y^2$
 (c) $a^8 + 12a^5b + 54a^2b^2 + \frac{108b^3}{a} + \frac{81b^4}{a^4}$
 (d) $x^3 - 12x^2 + 60x - 160 + \frac{240}{x} - \frac{192}{x^2} + \frac{64}{x^3}$
 7. (a) $a^{10} + 10a^9b + 45a^8b^2 + 120a^7b^3 + \dots$
 (b) $1 - 12x^2 + 66x^4 - 220x^6 + \dots$
 (c) $x^{18} + 18x^{14} + 144x^{10} + 672x^6 + \dots$
 (d) $256x^8 - 3072x^5 + 16128x^2 - \frac{48384}{x} + \dots$
 (e) $x^{18} - 12x^{13} + 60x^8 - 160x^3 + \dots$
 (f) $x^{11} + 11\sqrt{x^{23}} + 55x^{12} + 165\sqrt{x^{23}} + \dots$